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EXAMINER

WAKS, JOSEPH

ART UNIT PAPER NUMBER

2834

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,231

Applicant(s)

PLATT, STEVE ANDERSON

Examiner

Joseph Waks

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 3/11/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 is/are allowed.
- 6) ☐ Claim(s) 9,10,15-19,24-45 and 50-57 is/are rejected.
- 7) ☒ Claim(s) 11-14, 20-23, 46-49 and 58-70 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the two spars comprising at least six spars and the generator located upwind the spars must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the two spars comprising at least six spars, the generator located upwind the spars.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claim 38** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Re claim 38, the limitation of at least two spars including at six spars is not supported by the specification and/or drawings.

5. **Claim 38** is also rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. For the reasons indicated above one skilled in the art would not be able to make and/or use the invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 9, 10, 15, 17-19, 24, and 26** are rejected under 35 U.S.C. 102(b) as being anticipated by **Abe (US 4,311,434)**.

Abe discloses invention as claimed: a tower 1, a vertical elevator including track 1a and a carriage 12, and a pivot ring in a form of a roller bearing 17, a winch 13, a cable 14 and a pulley (Re Figure 3), a plurality of air foils 5, and electric power generator (Re column 1, lines 5-10).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 16, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Douthit (US 6,239,507)**.

Abe discloses the tower essentially as claimed. However, **Abe** does not disclose the carriage including the plurality of contacts contacting the rotating portion of the wind power generator.

Douthit discloses a carriage 16 rotatably supporting a wind powered generator 10 and having a plurality of contacts 130, 132 contacting the rotating portion of the generator 140, 142 for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation about a vertical axis.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the tower as taught by **Abe** and to provide the carriage including the plurality of contacts contacting the rotating portion of the wind power generator as taught by **Douthit** for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation about a vertical axis.

10. **Claims 27 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Ellwood, 2d (US 2,052,454)**.

Abe discloses the tower essentially as claimed. However, **Abe** does not disclose a rod rotating within a housing and at least two spars connected to, and radially extending from the rod and each having an airfoil connected thereon.

Ellwood, 2d discloses the wind powered generator (Re page 1, lines 27-29) having a rotating rod A and spars 16, 17, 18 connected to, and radially extending from the rod, each having an airfoil 21 connected thereon for the purpose of providing a variable pitch foil automatically adjusted to the wind velocity to obtain near constant revolutions at variable wind velocity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the tower as taught by **Abe** and to provide the rotating rod and the spars connected to, and radially extending from the rod, each having an airfoil connected thereon for the purpose of providing a variable pitch foil automatically adjusted to the wind velocity to obtain near constant revolutions at variable wind velocity.

Re claim 28, the combined system include the cam member shown by **Ellwood, 2d** as element 23 and the cam surface 32 engaging the cam member to rotate the airfoils relatively to the spars as the airfoils move along the spars. However, it does not disclose the cam member adjacent the second end of the spar, opposite the hub. It would have been an obvious matter of design choice to locate the cam member adjacent the second end of the spar, opposite the hub for an easy access to the pitch adjustment mechanism without taking the blade out of the spar, since applicant has not disclosed that this particular arrangement of the cam member solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the cam member adjacent the hub.

11. **Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)**.

Abe discloses the airfoil and generator including a vertical leg 10 to rotate the generator relatively the carriage. However, **Abe** does not disclose the leg rotating relatively to the carriage.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the leg rotating relatively to the carriage for the purpose of eliminating an oversized bearing and replace it with a shaft diameter sized bearing, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

12. **Claims 30, 44, 45, 50, 52** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Deering (US 5,584,655)**.

The combined tower disclosed the structure essentially as claimed. However, it does not disclose the horizontal leg including first and second shaft with the first shaft being rotatable within the second shaft and being interconnected with the foils and the second shaft connected to the vertical leg and the generator.

Deering discloses in Figure 2 the wind powered generator having the horizontal leg including first shaft 202 and a second shaft with the first shaft being rotatable within the second shaft and being interconnected with the foils 104a and 104 b and the second shaft connected to the vertical leg 210 and the generator for the purpose of positioning the airfoils at a desired downstream configuration by rotating the generator about the vertical axis 206.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to the horizontal leg including first and second shaft with the first shaft being rotatable within the second shaft and being

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interconnected with the foils and the second shaft connected to the vertical leg and the generator as taught by **Deering** for the purpose of positioning the airfoils at a desired downstream configuration by rotating the generator about the vertical axis while allowing the foil and shaft rotation over the horizontal axis and consequently to turn the electric generator.

13. **Claims 31-33, 53-56** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** of **Deering (US 5,584,655)** as applied to claims 30 and 44 above and further in view of **Ellwood, 2d (US 2,052,454)**.

The combined tower discloses the structure essentially as claimed. However, it does not disclose a rod rotating within a housing and at least two spars connected to, and radially extending from the rod and each having an airfoil connected thereon.

Ellwood, 2d discloses the wind powered generator (Re page 1, lines 27-29) having a rotating rod A and spars 16, 17, 18 connected to, and radially extending from the rod, each having an airfoil 21 connected thereon for the purpose of providing a variable pitch foil automatically adjusted to the wind velocity to obtain near constant revolutions at variable wind velocity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the rotating rod and the spars connected to, and radially extending from the rod, each having an airfoil connected thereon for the purpose of providing a variable pitch foil automatically adjusted to the wind velocity to obtain near constant revolutions at variable wind velocity.

Re claim 33, the combined system include the cam member shown by **Ellwood, 2d** as element 23 and the cam surface 32 engaging the cam member to rotate the airfoils

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relatively to the spars as the airfoils move along the spars. However, it does not disclose the cam member adjacent the second end of the spar, opposite the hub. It would have been an obvious matter of design choice to locate the cam member adjacent the second end of the spar, opposite the hub for an easy access to the pitch adjustment mechanism without taking the blade out of the spar, since applicant has not disclosed that this particular arrangement of the cam member solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the cam member adjacent the hub.

14. **Claims 34, 35 and 39-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ellwood, 2d (US 2,052,454)**.

Re claims 34, 35 **Ellwood, 2d** discloses the wind powered generator (Re page 1, lines 27-29) having a rotating rod A and spars 16, 17, 18 connected to, and radially extending from the rod, each having an airfoil 21 connected thereon for the purpose of providing a variable pitch foil automatically adjusted to the wind velocity to obtain near constant revolutions at variable wind velocity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the rotating rod and the spars connected to, and radially extending from the rod, each having an airfoil connected thereon for the purpose of providing a variable pitch foil automatically adjusted to the wind velocity to obtain near constant revolutions at variable wind velocity.

Re claims 39-41, **Ellwood, 2d** discloses the cam member 23 and the cam surface 32 engaging the cam member to rotate the airfoils relatively to the spars as the airfoils

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move along the spars. However, **Ellwood, 2d** does not disclose the cam member adjacent the second end of the spar, opposite the hub.

It would have been an obvious matter of design choice to locate the cam member adjacent the second end of the spar, opposite the hub for an easy access to the pitch adjustment mechanism without taking the blade out of the spar, since applicant has not disclosed that this particular arrangement of the cam member solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the cam member adjacent the hub.

Ellwood, 2d discloses the rotating rod member A, spars 17 connected to the rod, airfoils 21 connected to the spars cam member 23 and the cam surface 32 engaging the cam member to rotate the airfoils relatively to the spars as the airfoils move along the spars. However, **Ellwood, 2d** does not disclose six spars configuration.

It would have been an obvious matter of design choice to provide six spars for the purpose of optimizing the number of blades versus the height of the system of the desirable power output, since applicant has not disclosed that this particular arrangement of the spars and blades solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the three or other number of spars, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

The electrical generator is inherent to any wind powered electric plant.

15. **Claims 36, 37, 42, 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ellwood, 2d** (US 2,052,454) in view of **Deering** (US 5,584,655).

The combined tower discloses the structure essentially as claimed. However, it does not disclose the horizontal leg including first and second shaft with the first shaft being rotatable within the second shaft and being interconnected with the foils and the second shaft connected to the vertical leg and the generator.

Deering discloses in Figure 2 the wind powered generator having the horizontal leg including first shaft 202 and a second shaft with the first shaft being rotatable within the second shaft and being interconnected with the foils 104a and 104 b and the second shaft connected to the vertical leg 210 and the generator for the purpose of positioning the airfoils at a desired downstream configuration by rotating the generator about the vertical axis 206.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to the horizontal leg including first and second shaft with the first shaft being rotatable within the second shaft and being interconnected with the foils and the second shaft connected to the vertical leg and the generator as taught by **Deering** for the purpose of positioning the airfoils at a desired downstream configuration by rotating the generator about the vertical axis while allowing the foil and shaft rotation over the horizontal axis and consequently to turn the electric generator.

16. **Claim 51** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Deering (US 5,584,655)** as applied to claim 44 above and further in view of **Douthit (US 6,239,507)**.

The combined tower discloses the structure essentially as claimed. However, it does not disclose the carriage including the plurality of contacts contacting the rotating portion of the wind power generator.

Douthit discloses a carriage 16 rotatably supporting a wind powered generator 10 and having a plurality of contacts 130, 132 contacting the rotating portion of the generator 140, 142 for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the carriage including the plurality of contacts contacting the rotating portion of the wind power generator as taught by **Douthit** for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

17. **Claim 57** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Abe (US 4,311,434)** in view of **Fergusson (US 5,244,346)**.

Abe discloses a tower 1 having three vertical columns connected with braces, a fully assembled elevator to raise and lower a wind powered generator 2, 4, 5. However, **Abe** does not disclose the tower comprising a lower tower section and an upper tower section having the third column converging to the first and second columns.

Fergusson discloses in Figures 6 and 7 a portable wind machine having a portable tower comprising a lower tower section 223 and an upper tower section 225 for

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the purpose of providing a self containing system that is easy to transport and to install at site without the need of providing an additional crane or other hauling means.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the tower comprising the lower tower section and the upper tower section as taught by **Douthit** for the purpose of providing a self containing system that is easy to transport and to install at site without the need of providing an additional crane or other hauling means.

Allowable Subject Matter

18. **Claims 1-8** are allowed.

The feature of the upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being substantially parallel and the third upper column converging towards the first upper column and the second upper column, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

19. **Claims 11-14, 20-23, 46-49 and 58-70** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The feature of the upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being substantially parallel and the third upper column converging towards the first upper column and the second upper column, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Response to Arguments

20. Applicant's arguments filed on March 11, 2003 have been fully considered but they are not persuasive.

Re claims 9, 10, 15, 17-19, 24, and 26.

The feature of the carriage configured to move along a track is clearly shown in Figures 1, 3 and 4 where Abe disclosed a carriage 12 moving along track comprising guides 1a. Examiner also directs applicant's attention to page 6, lines 30-31 where applicant defines the track 44 being comprised of the first and second guides 45 and 47. Therefore, the Abe's disclosed carriage 12 and guides 1a fully conform to the applicant's claimed structure.

The ring is disclosed in Figure 3 that clearly shows the bearing 17 having an upper circular race and a lower circular race enclosing bearing's roller elements. One of ordinary skill in the art would recognize the well known in the art circular or ring structure of the bearing. Moreover, applicant shows in Figure 4 a similar ring 50 structure including a bearing 51, 55. Furthermore, Abe discloses at least part of the generator in a form of shaft 10 being accepted in the ring.

Re claim 16.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

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In this particular case Abe teaches invention essentially as claimed with exception to the carriage including the plurality of contacts contacting the rotating portion of the wind power generator.

Douthit teaches the method of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation about a vertical axis utilizing the well known in the art of rotary connector structures.

In combination Abe and Douthit teach the invention as claimed. The detailed design of such system is a design choice that requires only routine skills in the art.

Re claim 18.

Examiner directs applicant's attention to Abe's column 2, lines 22-30 that clearly states that after lowering the nacelle to the ground level a replacement of the generator (rotor, nacelle) can be performed i.e. Abe allows for removable placement of the generator within the carriage.

Re claim 19.

Abe discloses in Figures 3 and 4 the carriage 12 and the first and second strips 1a configured to accept the carriage. The side groove configured to accept the respective vertical side grooves are typical and inherent to the Abe's disclosed structure.

Re claims 27 and 28.

The rotating rod A and spars 16, 17, 18 connected to, and radially extending from the rod, each having an airfoil 21 connected thereon disclosed by Ellwood, 2d reads directly on the claim limitation. Moreover, the Abe disclosure that addresses the method of lifting the wind turbine generator on the tower is not limited to any specific system of

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turbine blade adjustment to the wind load. The same remark may be true for the applicant's disclosed wind tower. The applicant's claimed system is known in the art and is disclosed by Ellwood, 2d. Abe discloses the wind tower as claimed by applicant. In combination Ellwood, 2d and Abe disclose the invention as claimed and the motivation as provided above is sufficient and appropriate for seeking such combination.

Re claim 29, the airfoil and generator including a vertical leg or shaft 10 to rotate the generator relative to the carriage is clearly shown in Figure 2. The shaft or leg 10 disclosed by Abe is stationary and the wind turbine generator is allowed to freely rotate above the leg. They are well known in the art systems using shafts rotating with the generator system in a stationary opening furnished with bearings. Such an arrangement is shown for example as element 210 in US Patent 5,584,655 to Deering or element 22 in US Patent No. 5,178,518 to Carter, Sr. cited in the prior art made of record. Such modification will require a simple rearrangement of the disclosed features that involves only routine skill in the art.

Re claims 30, 44, 45, 50, 52, as mentioned above the Abe disclosure that addresses the method of lifting the wind turbine generator on the tower is not limited to any specific system of turbine blade system. Therefore, the provided motivation of using the system of Deering in combination with the tower disclosed by Abe is appropriate.

Re claims 31-33, and 53-56 the second shaft of a horizontal leg is connected to an end of a vertical leg at a position off center of axis of the vertical leg is disclosed by Deering in Figure 2 (see elements 202 and 210).

Re claim 39, the location of the generator upstream the spars is not addressed in the specification and the direction of wind is not shown in the drawings. Therefore, a reasonable search in the prior art of this feature is precluded.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (703) 308-1676. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-1341 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.


JOSEPH WAKS
PRIMARY PATENT EXAMINER
TC-2800

JW
June 25, 2003